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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,053	10/02/2003	Robert W. Heath JR.	P15397XR	4571
25694	7590	05/09/2006	EXAMINER	
INTEL CORPORATION			HA, DAC V	
P.O. BOX 5326			ART UNIT	
SANTA CLARA, CA 95056-5326			PAPER NUMBER	
			2611	

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/678,053

Applicant(s)

HEATH ET AL.

Examiner

Dac V. Ha

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-55 is/are allowed.
- 6) ☒ Claim(s) 56-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. This office action is in response to the Response filed on 04/04/06.

***Claim Objections***

2. Claims 57, 70-72 are objected to because of the following informalities:

Claim 70, line 10, "select" should be "selected".

Claims 71, 72, lines 3-4, "the received signal TSp" should be "the received signal" since claim 70 recites "the transmit signal TSp" on lines 4-5.

Claim 57, line 1-2, "the performance metric" should be "the performance parameter" to avoid antecedent problem.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 56-78** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al. (US 6,151,328) (hereafter Kwon) in view of Needham et al. (US 5,764,699) (hereafter Kwon).

**Regarding claim 70**, Kwon discloses the followings:

“a conversion unit, to receive data for wireless transmission to a remote device and to convert the received data into symbols” (Fig. 2, 3; col. 3, lines 37-41; col. 4, lines 7-42; col. 14, lines 13-17);

“an assignment unit, responsive to the conversion unit, to assign the symbols to transmit signals TSp of the communication channel, where  $P=1 \dots M$ , for transmission from M transmit antennas” (Fig. 1, element 1; Fig. 2; col. 4, lines 7-42; col. 13, lines 50-53);

“a receive element, coupled with the conversion unit and the assignment unit, to receive an indication” “from a remote communication unit” (Fig. 1, element 4; Abstract; col. 2, lines 16-33).

Kwon differs from the claimed invention in that Kwon does not disclose that the indication is “an indication of a selected mapping scheme from a plurality of possible mapping schemes” and “the conversion and assignment are performed in accordance with the selected mapping”. That is, in Kwon, the indication is utilized for, i.e. power control. However, the attention is now directed to Needham, which discloses an indication received from a remote unit is utilized for optimizing the transmission by selecting the optimal mapping (Abstract; Fig. 1, Fig. 3; col. 6, line 61 to col. 7, line 26. Thus, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching from Needham into Kwon to even further optimize the transmission of signal.

**Regarding claim 72**, Needham further discloses the claimed subject matter “wherein the indication ... received signal” in col. 6, line 39 to col. 7, line 27.

**Regarding claim 71**, the claimed subject matter “wherein the indication ... received signals TSp” would have been realized by one skilled in the art as optional since utilization of Euclidean distance in mapping scheme is not new in the art.

**Regarding claim 73**, see claim 71.

**Regarding claim 74**, Needham further discloses the claimed subject matter “a local transmitter ... communication channel” in that once the mapping scheme is selected, it will be used for communication between the radio units, which includes “a remote transmitter”.

**Regarding claim 75**, Needham further discloses the claimed subject matter “wherein ... CPM” in col. 4, lines 15-32.

**Regarding claim 76**, see claim 72.

**Regarding claim 77**, see claim 74.

**Regarding claim 78**, see claim 75.

**Regarding claim 56**, see claim 73.

**Regarding claim 57**, the claimed subject matter “wherein the ... (PER)” would have been obvious to one skilled in the art since measurement of channel measurement can be any of, i.e. BER, SNR, etc. (Needham, col. 7, lines 16-18, 32-35).

**Regarding claim 58**, the claimed subject matter “wherein ... channel” would have been obvious to one skilled in the art as preference.

**Regarding claims 60, 61**, see claims 74, 75.

**Regarding claims 62, 63**, these claimed subject would have been obvious to one skilled in the art as preference.

***Allowable Subject Matter***

5. Claims 1-55 are allowed.

***Response to Arguments***

6. Applicant's arguments with respect to claims 70, 76 (and their dependent claims) have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's arguments filed on 04/04/06 with respect to claims 56, 73 (and their dependent claims) have been fully considered but they are not persuasive. However, based on further consideration, a new ground of rejection is made in view of Kwon and Needham (indicated above).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-3086. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Dac V. Ha', with a long horizontal line extending from the end of the signature.

Dac V. Ha  
Primary Examiner  
Art Unit 2611